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HENSLEY KIM & EDGINGTON, LLC
1660 LINCOLN STREET, SUITE 3050
DENVER, CO 80264

EXAMINER	
ROSARIO, DENNIS	

ART UNIT	PAPER NUMBER
2621	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/900,506	KOTLIKOV ET AL.
	Examiner	**Art Unit**
	Dennis Rosario	2621

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _af amt. 3/24/2005_.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-46_ is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-46_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _01 October 2001_ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. The after final amendment was received on 3/24/2005. Currently claims 1-46 are pending.

2. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

Response to Arguments

3. Applicant's arguments, see after final amendment, pages 10-13, filed 3/24/2005, with respect to the rejection(s)of claim 1 under Edgar (US Patent 6,075,590 A) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Lawton et al. (US Patent 6,160,923).

Specification

4. The disclosure is objected to because it contains an embedded hyperlink and/or other form of browser-executable code. Applicant is required to delete the embedded hyperlink and/or other form of browser-executable code on pages 7 and 11. See MPEP § 608.01.

Claim Objections

5. The following quotations of 37 CFR § 1.75(a) is the basis of objection:

(a) The specification must conclude with a claim particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention or discovery.

6. Claims 9,10,15 and 21 are objected to under 37 CFR § 1.75(a) as failing to particularly point out and distinctly claim the subject matter which the applicant regards as his invention or discovery.

Claim 9, line 1:"The method of claim 3" has no antecedent basis and ought to be amended to "The method of claim 7".

Claim 10, line 1:"The method of claim 4" has no antecedent basis and ought to be amended to "The method of claim 7".

Claim 15, line 3:"includes linear combination of an interpolation of" has no support in the specification. The specification mentions "combinations" on page 10, last paragraph in the context of "linear interpolation" in the same paragraph. However, the combinations is in reference to morphological operations and not to linear interpolation. Support for a linear combination of an interpolation is not found. Based on this conclusion a suggestion is to amend claim 15, line 3 to "includes linear interpolation of".

Claim 21 has the same objection as claim 15.

Claim 31, line 12:"the identified" as no antecedent basis and ought to be amended to "the defined".

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1,2,5-10,12-17,24,28-46 are rejected under 35 U.S.C. 102(b) as being anticipated by Lawton et al. (US Patent 6,266,054 B1).

Regarding claim 1, Lawton et al. discloses a method of removing an object from a digital image derived from digital image data the method comprising:

a) displaying (Fig. 1, num. 47 is a display.) the digital image (Fig. 1, num. 47 is a display for displaying a digital image as shown in fig. 4C, num. 70.);

b) specifying a sub-region (Fig. 3,num. 60: SELECT A PORTION OF THE IMAGE TO EDIT specifies a sub-region or a portion.) of the displayed digital image (Fig. 3,num. 60: SELECT A PORTION OF THE IMAGE TO EDIT specifies a sub-region or a portion as shown in fig. 4D,num. 68 of the displayed digital image of fig. 4C,num. 70.) that contains at least a part of the object (Fig. 3,num. 60: SELECT A PORTION OF THE IMAGE TO EDIT specifies a sub-region or a portion as shown in fig. 4D,num. 68 of the displayed digital image of fig. 4C,num. 70 that contains at least a part of the object as shown by a shaded region in fig. 8.) and another sub-region (Fig. 3,num. 60: SELECT A PORTION OF THE IMAGE TO EDIT specifies a sub-region or a portion as shown in fig. 4D,num. 68 of the displayed digital image of fig. 4C,num. 70 that contains at least a part of the object as shown as a shaded region in fig. 8 and another sub-region shown in fig. 8 as white squares.) of the displayed digital image (Fig. 3,num. 60: SELECT A PORTION OF THE IMAGE TO EDIT specifies a sub-region or a portion as shown in fig. 4D,num. 68 of the displayed digital image of fig. 4C,num. 70 that contains at least a part of the object as shown as a shaded region in fig. 8 and another sub-region shown in fig. 8 as white squares of the displayed digital image of fig. 4C.) that does not contain the object (Fig. 3,num. 60: SELECT A PORTION OF THE IMAGE TO EDIT specifies a sub-region or a portion as shown in fig. 4D,num. 68 of the displayed digital image of fig. 4C,num. 70 that contains at least a part of the object as shown as a shaded region in fig. 8 and another sub-region shown in fig. 8 as white squares of the displayed digital image of fig. 4C that does not contain the object or shaded region of fig. 8.);

c) identifying (Fig. 3, label :"DISTORTION FOUND?" contains an identifying operation.) the object to be removed (Fig. 3, label :"DISTORTION FOUND?" contains an identifying operation that identifies the object via identified attributes from fig. 3,num.62 to be removed in a later process shown in fig. 3, num. 66: REMOVE THE DELINEATED DISTORTION FROM THE IMAGE PORTION SELECTED.) by categorizing (Fig. 3, label :"DISTORTION FOUND?" contains an identifying operation that identifies the object via identified attributes from fig. 3,num.62 to be removed in a later process shown in fig. 3, num. 66: REMOVE THE DELINEATED DISTORTION FROM THE IMAGE PORTION SELECTED by categorizing using fig. 3, num. 64: DELINEATE THE DISTORTION WITHIN THE IMAGE PORTION SELECTED AS A FUNCTION OF THE ATTRIBUTES which groups or delineates to form categories.) the digital image data (Fig. 3, label :"DISTORTION FOUND?" contains an identifying operation that identifies the object via identified attributes from fig. 3,num.62 to be removed in a later process shown in fig. 3, num. 66: REMOVE THE DELINEATED DISTORTION FROM THE IMAGE PORTION SELECTED by categorizing using fig. 3, num. 64: DELINEATE THE DISTORTION WITHIN THE IMAGE PORTION SELECTED AS A FUNCTION OF THE ATTRIBUTES which groups or delineates to form categories of the digital image data of fig. 4C,num. 70.)...

... in the sub-region that contains at least a part of the object (Fig. 3, label :"DISTORTION FOUND?" contains an identifying operation that identifies the object via identified attributes from fig. 3,num.62 to be removed in a later process shown in fig. 3, num. 66: REMOVE THE DELINEATED DISTORTION FROM THE IMAGE PORTION SELECTED by categorizing using fig. 3, num. 64: DELINEATE THE DISTORTION WITHIN THE IMAGE PORTION SELECTED AS A FUNCTION OF THE ATTRIBUTES which groups or delineates to form categories of the digital image data of fig. 4C,num. 70 in the sub-region as shown in fig. 4D, num. 68 that contains at least a part of the object shown in fig. 8 as the shaded region.) into an object region (Fig. 3, label :"DISTORTION FOUND?" contains an identifying operation that identifies the object via identified attributes from fig. 3,num.62 to be removed in a later process shown in fig. 3, num. 66: REMOVE THE DELINEATED DISTORTION FROM THE IMAGE PORTION SELECTED by categorizing using fig. 3, num. 64: DELINEATE THE DISTORTION WITHIN THE IMAGE PORTION SELECTED AS A FUNCTION OF THE ATTRIBUTES which groups or delineates to form categories of the digital image data of fig. 4C,num. 70 in the sub-region as shown in fig. 4D, num. 68 that contains at least a part of the object shown in fig. 8 as the shaded region into an object region as shown in a shaded region of fig. 8.)...

... and a non-object region (Fig. 3, label :"DISTORTION FOUND?" contains an identifying operation that identifies the object via identified attributes from fig. 3,num.62 to be removed in a later process shown in fig. 3, num. 66: REMOVE THE DELINEATED DISTORTION FROM THE IMAGE PORTION SELECTED by categorizing using fig. 3, num. 64: DELINEATE THE DISTORTION WITHIN THE IMAGE PORTION SELECTED AS A FUNCTION OF THE ATTRIBUTES which groups or delineates to form categories of the digital image data of fig. 4C,num. 70 in the sub-region as shown in fig. 4D, num. 68 that contains at least a part of the object shown in fig. 8 as the shaded region into an object region as shown in a shaded region of fig. 8 and a non-object region as shown as a white block region of fig. 8.);

d) modifying the digital image data (Fig. 3, num. 66: REMOVE THE DELINEATED DISTORTION FROM THE IMAGE PORTION SELECTED includes a modifying the digital image of fig. 4C,num. 70.) of the object region (Fig. 3, num. 66: REMOVE THE DELINEATED DISTORTION FROM THE IMAGE PORTION SELECTED includes a modifying the digital image of fig. 4C,num. 70 of the object region as shown in a shaded region of fig. 8.) to more closely resemble the digital image data of the non-object (Fig. 3, num. 66: REMOVE THE DELINEATED DISTORTION FROM THE IMAGE PORTION SELECTED includes a modifying the digital image of fig. 4C,num. 70 of the object region as shown in a shaded region of fig. 8 to more closely resemble as shown in fig. 10 the digital image data of fig. 4C of the non-object shown in fig. 8 and 10,num. 69 or white blocks that does not contain the object or shaded region of fig. 8. Note that the shaded region of fig. 8 is reduced as shown in fig. 10;thus, the object region of fig. 10 or shaded region closely resembles the non-object or the white squares as compared to fig. 8.); and

e) combining (Fig. 9, num. 90: COMPOSITE CORRECTION SPRITE OVER THE IMAGE contains a combining function.) noise (Fig. 9, num. 90: COMPOSITE CORRECTION SPRITE OVER THE IMAGE contains a combining function that combines noise or composites “characteristics of portions of the image” in col. 2, lines 39;40 using a “correction image” in col. 2, line 37 where the characteristics of portions of the image is “deteriorate[d] through use and age.”) into the modified digital image data (Fig. 9, num. 90: COMPOSITE CORRECTION SPRITE OVER THE IMAGE contains a combining function that combines noise or composites “characteristics of portions of the image” in col. 2, lines 39,40 using a “correction image” in col. 2, line 37, where the characteristics of portions of the image is “deteriorate[d] through use and age”, into the modified digital image data from fig. 3, num. 66: REMOVE THE DELINEATED DISTORTION FROM THE IMAGE PORTION SELECTED or from fig. 9,num. 88, which is a part of a detailed view of fig. 3,num. 66, of the digital image of fig. 4C,num. 70.)...

... of the object region (Fig. 9, num. 90: COMPOSITE CORRECTION SPRITE OVER THE IMAGE contains a combining function that combines noise or composites "characteristics of portions of the image" in col. 2, lines 39,40 using a "correction image" in col. 2, line 37, where the characteristics of portions of the image is "deteriorate[d] through use and age", into the modified digital image data from fig. 3, num. 66: REMOVE THE DELINEATED DISTORTION FROM THE IMAGE PORTION SELECTED or from fig. 9,num. 88, which is a part of a detailed view of fig. 3,num. 66 of the object region shown in a shaded region of fig. 8. Thus, the characteristics due to deterioration of the digital image of fig. 4C and the shaded object region of figure 8 forms a composite image using fig. 9, num. 90; thus, noise or deterioration is combined with the shaded object region of fig. 8.).

Regarding claim 2, Lawton et al. discloses the method of claim 1 wherein the digital image data (The digital image of fig. 4C,num. 70.) is provided (The digital image of fig. 4C,num. 70 is inputted.) in a format (The digital image of fig. 4C,num. 70 is inputted in a format of three colors as shown in an equation of column 7.) that describes a perceptual color space.

Regarding claim 5, Lawton et al. discloses the method of claim 2 wherein the object (The shaded region in fig. 8.) is a defect (The shaded region in fig. 8 is a "distortion" in col. 7, lines 51-53.).

Regarding claim 6, Lawton et al. discloses the method of claim 5 wherein the defect (The shaded region in fig. 8 is a “distortion” in col. 7, lines 51-53.) is digital data of a defect (The “distortion” in col. 7, lines 51-53 is digital data using the process of a computer of fig. 1.) in an original image (The “distortion” in col. 7, lines 51-53 is digital data using the process of a computer of fig. 1 in an original image as shown in fig. 4C.).

Regarding claim 7, Lawton et al. discloses the method of claim 1 wherein the noise is estimated from image data (The “characteristics of portions of the image” in col. 2, lines 39,40 is determined in fig. 9, num. 86:FROM THE NEIGHBORHOOD DETERMINE VALUES FOR A REPLACEMENT PIXEL.) in a vicinity of the object (The “characteristics of portions of the image” in col. 2, lines 39,40 is determined using fig. 9, num. 86:FROM THE NEIGHBORHOOD DETERMINE VALUES FOR A REPLACEMENT PIXEL which contains a vicinity as shown by a bold array in fig. 10 of the object as shown in figs. 8 and 10 as a shaded region.).

Regarding claim 8, Lawton et al. discloses the method of claim 7 wherein the noise is estimate by a process comprising:

a) sampling the digital image data (Fig. 10 shows a bold square grid that samples the digital image data of fig. 4C.) from the digital image data in the sub-region that does not contain the object (Fig. 10 shows a bold square grid that samples the digital image data of fig. 4C from the digital image data of fig. 4C that does not contain the object or shaded region of fig. 8 and shown again in fig. 10.).

Claims 9 and 10 are rejected the same as claim 8. Thus, argument similar to that presented above for claim 8 is equally applicable to claims 9 and 10.

Regarding claim 12, Lawton et al. discloses the method of claim 1 wherein object regions and non-object regions (The object region as shown in a shaded region of fig. 8 and a non-object region as shown as a white block region of fig. 8.) are designated by application of a threshold value for at least one component of the digital image data for a pixel (The object region as shown in a shaded region of fig. 8 and a non-object region as shown as a white block region of fig. 8 are designated or "delin-eates" in col. 7, lines 30,31 by application of a "threshold" in col. 7, line 20 "contrast" in col. 7, line 19 value for at least one component as shown by the equation of column 7 of the digital image data of fig. 4C for a pixel as shown in fig .7,num. 69c.).

Claim 13 is rejected the same as claim 12. Thus, argument similar to that presented above for claim 12 is equally applicable to claim 13.

Regarding claim 14, Lawton et al. discloses the method of claim 1 wherein the modifying of the digital image data of the object region to more closely resemble the digital image data of the non-object region (Fig. 3, num. 66: REMOVE THE DELINEATED DISTORTION FROM THE IMAGE PORTION SELECTED includes a modifying the digital image of fig. 4C,num. 70 of the object region as shown in a shaded region of fig. 8 to more closely resemble as shown in fig. 10 the digital image data of fig. 4C of the non-object shown in fig. 8 and 10,num. 69 or white blocks that does not contain the object or shaded region of fig. 8. Note that the shaded region of fig. 8 is reduced as shown in fig. 10;thus, the object region of fig. 10 or shaded region closely resembles the non-object or the white squares as compared to fig. 8.) includes:

a) interpolation of non-defect data (Averaging as mentioned in col. 8, line 48 is performed on non-defect data or "pixels within the...neighborhood which are not shaded" in col. 8, lines 48,49.).

Regarding claim 15, Lawton et al. discloses the method of claim 1 wherein the modifying of the digital image data of the object region to more closely resemble the digital image data of the non-object region includes:

a) linear [combination of an] interpolation (Averaging as mentioned in col. 8, line 48 performs an interpolation by inserting a value as shown in fig. 10 as a black square based on a bold grid that is linear as shown in fig. 10.) of non-defect data (Averaging as mentioned in col. 8, line 48 performs an interpolation by inserting a value as shown in fig. 10 as a black square based on a bold grid that is linear as shown in fig. 10 of non-defect data as shown by the white squares within the bold grid.) and of original image data (Averaging as mentioned in col. 8, line 48 performs an interpolation by inserting a value as shown in fig. 10 as a black square based on a bold grid that is linear as shown in fig. 10 of non-defect data as shown by the white squares within the bold grid and of original image data which is the same above mentioned non-defect data as shown by the white squares.).

Claim 16 is rejected the same as claim 15. Thus, argument similar to that presented above for claim 15 is equally applicable to claim 16.

Regarding claim 17, Lawton et al. discloses the method of claim 1 wherein the noise (The noise or "characteristics of portions of the image" in col. 2, lines 39,40 where the characteristics of portions of the image is "deteriorate[d] through use and age.") is random noise (The noise or "characteristics of portions of the image" in col. 2, lines 39,40 where the characteristics of portions of the image is "deteriorate[d] through use and age" is random noise because deterioration can be caused randomly through everyday use.).

Regarding claim 24, Lawton et al. discloses a computer (Fig.1, label "PERSONAL COMPUTER") and software (Fig. 1,num. 29) in the memory (FIG. 1, num. 22: SYSTEM MEMORY) of the computer that can execute the process of claim 1.

Regarding claim 28, Lawton et al. discloses the method of claim 1 wherein the displaying operation (Fig. 1, num. 47 is a display.) comprises:

a) displaying the digital image (Fig. 1, num. 47 is a display for displaying a digital image as shown in fig. 4C, num. 70.) to a user (Fig. 1, num. 47 is a display for displaying a digital image as shown in fig. 4C, num. 70 to a user which uses an interface as shown in fig. 4C on the left side.), and

b) the specifying operation (Fig. 3,num. 60: SELECT A PORTION OF THE IMAGE TO EDIT specifies a sub-region or a portion.) comprises:

b1) receiving input from the user specifying a location of a virtual frame within the displayed digital image (Lawton et al. states,"...the user is responsible for selecting the portion of the image or pixel area...(col. 5, line 66 to col. 6, line1).") ,

b2) the virtual frame defining the sub-region of the displayed digital image (The area is shown in fig. 4D, num. 68 as a virtual frame.) that contains the at least a part of the object (The area is shown in fig. 4D, num. 68 as a virtual frame that contains the at least a part of the object as shown by the shaded region of fig. 8.) and the sub-region of the displayed digital image that does not contain the object (The area is shown in fig. 4D, num. 68 as a virtual frame that contains the at least a part of the object as shown by the shaded region of fig. 8 and the sub-region 68 of fig. 4D shown again in fig. 8,num. 68 does not contain the object as shown by the white squares of fig. 8.).

Claim 29 is rejected the same as claims 1 and 24. Thus, arguments similar to that presented above for claims 1 and 24 are equally applicable to claim 29.

Claim 30 is rejected the same as claim 28. Thus, argument similar to that presented above for claim 28 is equally applicable to claim 30.

Regarding claim 31, Lawton et al. discloses a method of correcting a defect from a digital image, the method comprising:

a) defining by user input a defect sub-region of the digital image that contains at least one pixel of the defect and at least one pixel not of the defect (Lawton et al. states,"...the user is responsible for selecting the portion of the image or pixel area...(col. 5, line 66 to col. 6, line 1)" as shown in fig. 9 where the shaded region is the defect sub-region and the white blocks are not of the defect.);

b) defining by user input (Lawton et al. states,"...the user is responsible for selecting the portion of the image or pixel area...(col. 5, line 66 to col. 6, line 1).") a non-defect sub-region of the digital image that does not contain a pixel of the defect (Lawton et al. states,"...the user is responsible for selecting the portion of the image or pixel area...(col. 5, line 66 to col. 6, line 1)" that contains a non-defect sub-region as shown in fig. 10 by the white squares of the bold grid and mentioned in col. 8, lines 46-49. Thus, the above mentioned non-defect sub-region of fig. 10 is defined by a user input that selected the region 68 of fig. 10.);

c) defining an array of interest (Fig. 10,num. 68 is an array of interest.) in the digital image (Fig. 10,num. 68 is an array of interest in the digital image of fig. 4C, num 70.) including one or more pixels (Fig. 10,num. 68 is an array of interest in the digital image of fig. 4C, num 70 that contains pixels as represented as squares in fig. 10.) in the defect sub-region (Fig. 10,num. 68 is an array of interest in the digital image of fig. 4C, num 70 that contains pixels as represented as shaded squares which is the defect sub-region in fig. 10.) and one or more pixels in the non-defect sub-region (Fig. 10,num. 68 is an array of interest in the digital image of fig. 4C, num 70 that contains pixels as represented as shaded squares which is the defect sub-region in fig. 10 and white squares which in the non-defect sub-region of fig. 10.);

d) classifying (Fig. 3, num. 64: DELINEATE THE DISTORTION WITHIN THE IMAGE PORTION SELECTED AS A FUNCTION OF THE ATTRIBUTES which groups or delineates that form classes.) one or more pixels along the array of interest (Fig. 3, num. 64: DELINEATE THE DISTORTION WITHIN THE IMAGE PORTION SELECTED AS A FUNCTION OF THE ATTRIBUTES which groups or delineates that form classes of pixels as delineated as shown by the shaded regions of fig. 10 and not delineated as shown by the white squares of fig. 10 along the array of interest of fig. 10, num. 68.) in the defect sub-region as defect pixels (Fig. 3, num. 64: DELINEATE THE DISTORTION WITHIN THE IMAGE PORTION SELECTED AS A FUNCTION OF THE ATTRIBUTES which groups or delineates that form classes of pixels as delineated as shown by the shaded regions or defect sub-regions as defect pixels of fig. 10 and not delineated as shown by the white squares of fig. 10 along the array of interest of fig. 10, num. 68.), based on image data of pixels in the array of interest within the non-defect sub-region (Fig. 3, num. 64: DELINEATE THE DISTORTION WITHIN THE IMAGE PORTION SELECTED AS A FUNCTION OF THE ATTRIBUTES which groups or delineates that form classes of pixels as delineated as shown by the shaded regions or defect sub-regions as defect pixels of fig. 10 and not delineated as shown by the white squares of fig. 10 along the array of interest of fig. 10, num. 68 based on image data of pixels or squares in the array of interest of fig. 10,num. 68 within the non-defect sub-region using a method as mentioned in col. 7, lines 5-33 and shown in fig. 7, where num. 69 represents a vertical line as shown in fig. 8,num. 69 and the non-defect sub-region or white squares of fig. 7 are used to delineate or shade the regions shown in fig. 8.); and

e) modifying (Fig. 9, num. 90:COMPOSITE CORRECTION SPRITE OVER THE IMAGE contains a modifying operation.) the [identified] **defined** defect pixels in the defect sub-region (Fig. 9, num. 90:COMPOSITE CORRECTION SPRITE OVER THE IMAGE contains a modifying operation that modifies defined defect pixels as shown in fig. 9 where the shaded region is the defect sub-region.) to correct the defect from the digital image (Fig. 9, num. 90:COMPOSITE CORRECTION SPRITE OVER THE IMAGE contains a modifying operation that modifies defined defect pixels as shown in fig. 9 where the shaded region is the defect sub-region to correct the defect as fig. 9,num. 90 implies.).

Regarding claim 32, Lawton et al. discloses the method of claim 31 wherein the defect sub-region (The shaded region of fig. 8) is adjacent (As shown in fig. 8) to the non-defect sub-region (The white squares of fig. 8) in the digital image (Fig. 4C,num. 70).

Regarding claim 33, Lawton et al. discloses the method of claim 31 wherein the array of interest (Fig. 10,num. 68 is an array of interest.) is aligned (Fig. 10,num. 68 is an array of interest that is aligned as shown in fig. 6A.) with a column of pixels (Fig. 10,num. 68 is an array of interest that is aligned with a column of pixels of fig. 6A,num. 69.) in the digital image.

Claim 34 is rejected the same as claim 33. Thus, argument similar to that presented above for claim 33 is equally applicable to claim 33.

Regarding claim 35, Lawton et al. discloses the method of claim 31 wherein the defect sub-region and the non-defect sub-region are defined within a virtual frame (Fig. 4C,num. 68 is a virtual frame where contents of the frame are shown in fig. 8 that includes the defect and non-defect regions.).

Claim 36 is rejected the same as claim 35. Thus, argument similar to that presented above for claim 36 is equally applicable to claim 35.

Regarding claim 37, Lawton et al. discloses the method of claim 36 wherein the virtual frame (Figs. 10 and 11,num. 68 is a virtual frame.) has a central axis (Figs. 10 and 11,num. 68 is a virtual frame that has an "axis" as shown in fig. 11.), the defect has a central axis (Figs. 10 and 11,num. 68 is a virtual frame that has an "axis" as shown in fig. 11 which goes through the defect or shaded area, thus the defect has the same axis as the virtual frame.), and further comprising:

a) rotating the virtual fame (Figs. 10 and 11,num. 68 is a virtual frame that is rotated as shown in fig. 4B.) to align the central axis of the virtual frame with the central axis of the defect (Figs. 10 and 11,num. 68 is a virtual frame that is rotated as shown in fig. 4B to align the central axis of the virtual frame 68 and the central axis of the defect that are aligned with each other as shown in fig. 11.).

Regarding claim 38, Lawton et al. discloses the method of claim 37 wherein the rotating operation (Figs. 10 and 11,num. 68 is a virtual frame that is rotated as shown in fig. 4B.) defines a rotated virtual frame and comprises;

a) sub-pixel sampling individual pixels (Fig. 10 shows a bold grid that samples individual pixels in a sub-region of fig. 10,num. 68, hence sub-pixel sampling.) in the virtual frame (Fig. 10 shows a bold grid that samples individual pixels in a sub-region of fig. 10,num. 68, hence sub-pixel sampling.) to define a corresponding new pixel (Fig. 10 shows a bold grid that samples individual pixels in a sub-region of fig. 10,num. 68, hence sub-pixel sampling to define a corresponding new pixel represented as a black square of fig. 10.) within the rotated virtual frame (Fig. 10 shows a bold grid that samples individual pixels in a sub-region of fig. 10,num. 68, hence sub-pixel sampling to define a corresponding new pixel represented as a black square of fig. 10 within the rotated virtual frame as shown in fig. 4B.).

Claim 39 is rejected the same as claim 31. Thus, argument similar to that presented above for claim 31 is equally applicable to claims 39 except for the additional limitation of a computer program storage, which is disclosed by Lawton et al. as, discussed in claim 24.

Claims 40-46 are rejected the same as claims 32-38, respectively. Thus, arguments similar to that presented above for claims 32-38 is equally applicable to claims 40-46.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claims 3,4,18-23 and 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lawton et al. (US Patent 6,266,054 B1) in view of Hino (US Patent 5,956,015 A).

Regarding claim 3, Lawton teaches the method of claim 2 wherein the perceptual color space (The digital image of fig. 4C,num. 70 is inputted in a format of three colors as shown in an equation of column 7.) is selected (The digital image of fig. 4C,num. 70 is inputted in a format of three colors as shown in a first equation of column 7 or selected from another format as shown in a second equation of column 7.) from perceptual color spaces (The digital image of fig. 4C,num. 70 is inputted in a format of three colors as shown in a first equation of column 7 or selected from another format as shown in a second equation of column 7 where both equation describe two color spaces.) having a lightness component.

Lawton et al. does not teach the limitation of a space with a lightness component, but does suggest that "color component[s]" in col. 7, lines 41,42 with various "standard feature attributes" in col. 7, line 40.

However, Hino, in the similar filed of displaying, teaches color components (Fig. 8, label RGB DATA corresponds to the claimed components.) as suggested by Lawton et al. in a color space having a lightness component (Fig. 8, label RGB DATA corresponds to the claimed components having a lightness component as shown by the "Y" output of fig. 8, label "RGB → XYZ CONVERSION".).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Lawton et al.'s teaching of a color component with standard features with Hino's teaching of a lightness component, because Hino's lightness component enables a user to "adjust[ ]" in column 11, line 65 the appearance of an image until "satisfie[d]" in column 11, line 66.

Regarding claim 4, Lawton et al. teaches the method of claim 2 wherein the perceptual color space is selected from the group (The digital image of fig. 4C,num. 70 is inputted in a format of three colors as shown in a first equation of column 7 or selected from another format as shown in a second equation of column 7 where both equation describe two color spaces.) consisting of CIE L*u*v* and CIE L*a*b* color spaces.

Lawton et al. does not teach the additional limitation of CIE L*u*v* and CIE L*a*b* color spaces, but does suggest a modification of one color space to create another color space.

However, Hino teaches the additional limitation of a perceptual color space (A "CIE LAB" in column 3, lines 7,8 perceptual color space.) that is selected (A "CIE LAB" in column 3, lines 7,8 perceptual color space is used over another space in column 3, lines 7,8.) from perceptual color spaces consisting of CIE L*u*v and CIE L*a*b color spaces (A "CIE LAB" in column 3, lines 7,8 perceptual color space is used over another space in column 3, lines 7,8: CIE LUV in column 3, line 2.).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Lawton et al.'s teaching of modifying a color space to create another color space with Hino's teaching of the CIE LAB color space, because the CIE LAB color space compensates for visual effects of the human visual system in column 2, line 57 to column 3, line 4.

Claim 11 is rejected the same as claim 4. Thus, argument similar to that presented above for claim 11 is equally applicable to claim 4.

Claim 18 is rejected the same as claim 7. Thus, argument similar to that presented above for claim 7 is equally applicable to claim 18.

Claims 8 and 9 are rejected the same as claim 7. Thus, argument similar to that presented above for claim 7 is equally applicable to claims 8 and 9.

Claim 19 is rejected the same as claim 13. Thus, argument similar to that presented above for claim 13 is equally applicable to claim 19.

Claim 20 is rejected the same as claim 14. Thus, argument similar to that presented above for claim 14 is equally applicable to claim 20.

Claim 21 is rejected the same as claim 15. Thus, argument similar to that presented above for claim 15 is equally applicable to claim 21.

Claims 22 and 23 are rejected the same as claims 16 and 17, respectively. Thus, arguments similar to that presented above for claims 16 and 17 are equally applicable to claims 22 and 23.

Claims 25,26 and 27 are rejected the same as claim 24. Thus, argument similar to that presented above for claim 24 is equally applicable to claims 25,26 and 27.

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dennis Rosario whose telephone number is (571) 272-7397. The examiner can normally be reached on 6-3.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on (571)272-7453. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Dennis Rosario Unit 2621
DR

BHAVESH M. MEHTA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600